

Notice of Allowability	Application No.	Applicant(s)	
	10/023,556	CORMAN ET AL.	
	Examiner	Art Unit	
	James S. Wozniak	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the request for continued examination filed on 7/31/2006.
2. ☒ The allowed claim(s) is/are 1-3, 5, 7-12, 14-31, 33, and 35-36 (now claims 1-31).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

Response to Amendment

1. In response to the office action from 2/2/2006, the applicant has submitted a request for continued examination, filed 7/31/2006, amending claims 1, 8, and 28, while arguing to traverse the art rejection based on the amended limitations (*Amendment, Pages 11-14*). The applicant's arguments have been fully considered and claims 1-3, 5, 7-12, 14-31, 33, and 35-36 are allowable over the prior art of record for the below noted reasons.

Allowable Subject Matter

2. **Claims 1-3, 5, 7-12, 14-31, 33, and 35-36** are allowable over the prior art of record.

3. The following is an examiner's statement of reasons for allowance:

With respect to **Claims 1, 8, and 28**, the prior art of record fails to explicitly teach or fairly suggest, either individually or in combination, a method for categorizing a text input comprising: dividing an input text into sentences, parsing the sentences into one or more noun phrases (*a noun and zero or more additional nouns and/or adjectives which serves as the subject or object of a sentence, Specification, Page 8*), linking all possible sequential word pairs within the noun phrases to create word relationship networks (*Specification, Pages 10-11*), and analyzing the influence of each word in the noun phrases using betweenness centrality, which represents the total flow (*number of paths*) through the centering words in a centering noun

phrase that connects peripheral word elements, wherein influence is calculated according to the equation listed on page 13 of the specification. This calculated influence is then utilized in a text content understanding application (*Specification, Page 16*).

Although Hearst (*"Automated Discovery of WordNet Relations," 1998*) discloses parsing input text (*Pages 6-7, Section 2.3*), generating hyponym-hypernym word relationships within a noun phrase (*Pages 8-13, Section 3*), and determining word influence of a central hypernym (*class*) word in defining a hyponym (*subclass*) (*Pages 8-13, 16-17*), the means of determining word influence in Hearst does not utilize "betweenness centrality" as it is defined in amended claims 1, 8, and 28. Hearst utilizes a relationship between a word within a noun phrase (*hypernym*) and *single* hyponyms to determine the influence of a hypernym in defining a hyponym. This word influence is not defined based on the flow between two word elements through a central noun phrase word element, which would otherwise have no relationship with one another if not for the presence of the centering noun phrase. Thus, the calculation of word influence of the presently claimed invention differs from that disclosed by Hearst.

Therefore, Claims 1, 8, and 28 are allowable over the prior art of record.

Dependent **claims 2-3, 5, 9-12, 14-15, 29-31, 33, and 35-36** further limit allowable independent claims, and thus, are also allowable over the prior art of record.

Other pertinent prior art:

Although McKeown et al (*U.S. Patent: 6,473,730*) teaches a means for determining a noun phrase central to text meaning, McKeown relies on a metric based on the number of times a term appears in a document (*Col. 8, Lines 50-67*) and not betweenness centrality as it is defined in the presently claimed invention.

With respect to **Claim 7**, the prior art of record fails to explicitly teach or fairly suggest a method for categorizing input text by parsing the text into noun phrases that provide word relationships (*nouns, verbs, pronouns, determiners, etc.*), linking sequentially occurring noun phrases to form a word relationship network, and calculating the relative structural influence or flow through the particular network element corresponding to each word in the word relationship network by utilizing the equation in claims 7, 14, and 35. The calculated influences are then utilized in the word pair resonance calculation shown on page 15 of the specification, which measures word similarity between two text documents in order to achieve the text categorization. Although Hearst teaches analyzing word influence, Hearst does not utilize the equation in claims 7, 14, and 35 or a derivative thereof to determine the influence of a word in a word relationship network or the word pair resonance equation shown in page 15 to accomplish text categorization.

With respect to **Claim 16**, the prior art of record fails to explicitly teach or fairly suggest a method for categorizing input text by calculating word resonance, or similarity, between two text documents by utilizing the equation in claim 16 (*found on page 14 of the specification*), wherein the equation requires the parsing of text into noun phrases that provide word relationships (*nouns, verbs, pronouns, determiners, etc.*), the linking of sequentially occurring noun phrases to form a word relationship network, and word influences calculated according to the equation of claim 7 (*shown on page 13 of the specification*).

With respect to **Claim 18**, the prior art of record fails to explicitly teach or fairly suggest a method for categorizing input text by calculating word pair resonance, or similarity, between two text documents by utilizing the equation in claim 18 (*also found on page 15 of the specification*), wherein the equation requires the parsing of text into noun phrases that provide

word relationships (*nouns, verbs, pronouns, determiners, etc.*), the linking of sequentially occurring noun phrases to form a word relationship network, and word influences calculated according to the equation of claim 7 (*also shown on page 13 of the specification*).

Claims 17 and 19-27 further limit allowable independent claims, and thus, are also allowable over the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James S. Wozniak whose telephone number is (571) 272-7632. The examiner can normally be reached on M-Th, 7:30-5:00, F, 7:30-4, Off Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached at (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James S. Wozniak
10/5/2006



DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800